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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,904	11/15/2001	Thomas Rothmann	QGN-022.0 US	5521

29425 7590 06/23/2004

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EXAMINER
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QUAN, ELIZABETH S

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/002,904

Applicant(s)

ROTHMANN ET AL.

Examiner

Elizabeth Quan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to clearly show the bore into which the barb is inserted as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. New corrected drawings are required in this application because the drawings do not clearly show the invention. The invention is depicted in a blurred format. For example, the details of the plug-in connection are not clearly shown, such that it is unclear what detail of the plug-in connection (21) characterizes the plug-in connection as a barb. Are the minute

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projections midway between the ends of the plug-in connection considered a part of the plug-in connection or are they pixel dots that have run astray? The drawings also do not show how the vessels are connected. Fig. 1 shows a sidewall of the supporting plate fading. It is unclear whether there is any significance to the fading feature. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The instant specification lacks explanation of how the invention works, particularly how the vessel(s) and supporting plate are "irreversibly" connected to one another. The instant specification states "The supporting plate and vessel are preferably connected together via an apparatus so that they cannot be separated without destruction of this apparatus...a part of the plug-in connection is attached to the sample-receiving vessel and connects the support plate with the vessel via a barb. If the barb is guided into a suitable bore, which is not the bore for

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receiving the vessels, the vessel and the plate are irreversibly connected together.” The instant specification does not describe how the action of guiding the barb into a bore provides for an irreversible connection and what structure of the barb and bore provides for an irreversible connection. Furthermore, it appears that pressing the barb toward the vessel may release the barb from the bore without damage, such that the connection between the vessel(s) and supporting plate is reversible. WO 98/47542 to Frieze discloses a bracket with a plurality of cavities for holding instruments comprising head portions (214a,214b) with barbs (230a,230b) that pass through the bore (120) and snap into a locked position, which is resistant to removal. Frieze further discloses that it is merely necessary to pinch or squeeze the head portions together and gently pull on the bracket to permit the barbs to pass back through the bores to remove the bracket (figs. 7a-7e; page 7, line 13-page 8, line 30). U.S. Patent No. 3,154,281 to Frank discloses a holder (14) comprising a shank (24) having four prongs (30) with barbed, lower ends (32) that pass through bore (12) of panel (10) to securely lock the holder in place (col. 1, line 45-col. 2, line 43). Frank further discloses that the holder may be removed (col. 1, lines 12-15). U.S. Patent No. 6,481,583 to Black et al. discloses a support structure (10) comprising a plurality of receiver openings (30) for receiving tools and clips members (40) with barb-like hooks (44,46) for securely engaging bores (14) within the pegboard (12) to prevent accidental removal (col. 3, line 36-col. 4, line 45). Each of the prior art—Frieze, Frank, and Black et al—shows that the insertion of a barb into a bore is a reversible connection. The connection between the barb and bore being “irreversible” appears contrary to that disclosed in prior art. Furthermore, it is essential to provide information about how the action of inserting the barb into the bore and what structure of the barb and bore would provide an “irreversible” connection since the connection

between the barb and bore can be provided in several ways. The bore may have slot(s) in its walls to provide engagement with the barb, or the barb may be of sufficient length and diameter relative to the bore, such that the barb hooks onto the sidewall of the bore. In the latter case, the bore must have both ends open, such that the barb can hook onto the bottom end. In the former case, the bore must have a top open end but need not have an open bottom end. Frieze, Frank, and Black et al. all illustrate the case of the barb with sufficient length and diameter relative to the bore, such that the barb hooks onto the sidewall of the bore. U.S. Patent No. 4,868,875 to Goatman illustrates the case of the bore with slot(s) in its wall to provide engagement with the barb, such that the bottom end of the bore need not be open.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 1-7 are rendered indefinite since it is unclear what structure provides irreversible connection. Part of the indefiniteness stems from the lack of explanation in the disclosure. The specification has not provided how the action of inserting the barb into the bore and what structure of the barb and bore provide for irreversible connection. Furthermore, the concept of an irreversible connection between the barb and bore appears contrary to the prior art. This raises the question of what an irreversible connection means.

8. Claim 3 is rendered indefinite since it is unclear what the shape of a barb is. U.S. Patent No. 5,846,489 to Bienhaus et al. shows a barb (102), which is simply a round bulge (fig. 1; col.

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3, lines 65 and 66). U.S. Patent No. 5,285,253 to Kloth shows arrow-like hooks and cylindrical hooks that are similar to that of Moll et al. (figs. 3 and 16). U.S. Patent No. 6,669,911 to Swanson discloses a barb (41) tapered to a vertex. Based on the prior art, there is no established standard for what is considered "barb" shaped.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 01/45844 to Moll et al.

Moll et al. disclose an apparatus comprising a first part (120) with a plurality of vessels (125) disposed adjacently in a row and connected to one another and a supporting plate (200) having bores for receiving the vessels (figs. 6a-d). The vessels and supporting plate are irreversibly connected to one another by a plug-in connection in which male portions (204) with heads (203) of the supporting plate lock into the female portions (128) with holes (129) of the first part (figs. 6a-d; page 14, lines 23-25; page 15, lines 26-29).

It appears that the combination of the male portion and head is in the shape of a barb, which is defined as a sharp projection extending backward (as from the point of an arrow or fishhook) and preventing easy extraction; *also* : a sharp projection with its point similarly

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oblique to something else by Merriam-Webster Collegiate Dictionary. U.S. Patent No. 5,846,489 to Bienhaus et al. shows a barb (102), which is simply a round bulge (fig. 1; col. 3, lines 65 and 66). U.S. Patent No. 5,285,253 to Kloth shows arrow-like hooks and cylindrical hooks that are similar to that of Moll et al. (figs. 3 and 16). U.S. Patent No. 6,669,911 to Swanson discloses a barb (41) tapered to a vertex. Based on the prior art, there is no established standard for what is considered “barb” shaped. Therefore, a “barb” shape may be broadly interpreted as any shape that is capable of engaging or latching another surface.

11. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,846,489 to Bienhaus et al.

Bienhaus et al. disclose an apparatus comprising a plurality of vessels (1) disposed adjacently in a row and connected to one another by the supporting plate (2), which has bores (3) for receiving the vessels (fig. 1). The vessels are connected to the supporting plate by a “barb” (102) (fig. 1; col. 3, lines 65 and 66). The specification has not provided how a barb and bore form an irreversible connection. Since the vessels are fixed to the supporting plate by a barb, it is considered an irreversible connection. The supporting plate may have an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (col. 3, lines 56-66).

12. Claims 1, 2, 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,340,589 to Turner et al.

Turner et al. disclose an apparatus (10) comprising a well and deck portion (12) with a plurality of vessels (14) disposed adjacently in a row and connected to one another and a supporting plate (11) having bores (13) for receiving the vessels (figs. 1-10). The vessels and



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supporting plate are irreversibly connected to one another by forming them integrally or forming them separately, plugging the well and deck portion atop the supporting plate with the vessels in appropriate bores, and permanently assembling them by adhering steps that may include ultrasonic or thermal welding using appropriate equipment (col. 7, lines 38-45; col. 13, line 38-col. 14, line 9). The supporting plate may have an array of 384 bores arranged in a rectangular array of 16 x 24 bores capable of receiving an array of 384 vessels or an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (col. 9, lines 3-20).

13. Claims 1, 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,514,343 to Verwohlt et al.

Verwohlt et al. disclose an apparatus comprising a plurality of vessels (16) disposed adjacently in a row and connected to one another and a supporting plate (10) having bores (13) for receiving the vessels (figs. 1-4). The vessels and supporting plate can be irreversibly connected by adhesive. The supporting plate has an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (figs. 1-4).

14. Claims 1, 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,470,536 to Jarvimaki.

Jarvimaki discloses an apparatus comprising a plurality of vessels (2) disposed adjacently in a row and connected to one another and a supporting plate (4) having bores (5) for receiving the vessels (figs. 1-5). The vessels and supporting plate can be irreversibly connected by adhesive. The supporting plate has an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (figs. 1-5).

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15. Claims 1, 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,096,672 to Tervamaki et al.

Tervamaki et al. disclose an apparatus comprising a plurality of vessels (2) disposed adjacently in a row and connected to one another and a supporting plate (6) having bores (8) for receiving the vessels (figs. 1-2). The vessels and supporting plate can be irreversibly connected by adhesive. The supporting plate has an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (figs. 1-2).

16. Claims 1, 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,048,957 to Berthold et al.

Berthold et al. disclose an apparatus comprising a plurality of vessels (20) disposed adjacently in a row and connected to one another and a supporting plate (10) having bores (11) for receiving the vessels (figs. 1-5). The vessels and supporting plate can be irreversibly connected by adhesive. The supporting plate has an array of 96 bores arranged in a rectangular array of 8 x 12 bores capable of receiving an array of 96 vessels (figs. 1-5).

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. Alternatively, claims 4-7 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,846,489 to Bienhaus et al.

In the event one would argue that Bienhaus et al. do not disclose the vessels are connected to one another, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Bienhaus et al. with strips of connected vessels for efficient, rapid, and simultaneous placement of vessels into the bores.

In the event one would argue that Bienhaus et al. do not disclose the supporting plate with 96 bores and eight vessels disposed adjacently in a row, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Bienhaus et al. with a supporting plate with 96 bores and eight vessels disposed adjacently in a row to conform with industry standards for accessibility to automation and ancillary equipment designed to the standard.

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21. Claims 5-7 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 01/45844 to Moll et al.

Moll et al. disclose: "Up until recently, microtiter plates have been used that conform to a standardized size of 85.47 by 127.76 mm having 12 rows of 8 wells each. However, there is now a desire to increase the productivity of such automatic sample. Such should preferably be accomplished in the most cost effective way and it has been proposed to retain approximately the size of the micro-titer plates yet increasing the number of wells therein" (page 1, lines 26-31).

Moll et al. further disclose: "The micro-titer plate of the present invention is not limited to the dimensions of the single parts mentioned herein. Generally, the micro-titer plate of the invention can be produced in any desired size...For example the method of the present invention can be used to make a micro-titer plate having a length between 11 and 13 cm and a width between about 8 and 9 cm and having from 90 to 400 sample containers. For example, a micro-titer plate of the aforementioned dimensions and having 96 or 384 sample containers may be produced with the method of the present invention" (page 11, lines 5-13). One would expect that the supporting plate would have 90, 96, 384 or 400 bores for receiving the 90, 96, 384, or 400 vessels.

Furthermore, since it was disclosed that the standard micro-titer plate has 12 rows of 8 wells each and there is a desire to increase the number of wells while retaining the size of the micro-titer plate, one would expect that there are at least eight vessels in a row connected to each other.

In the event one would argue that Moll et al. do not disclose the supporting plate with 96 bores and eight vessels disposed adjacently in a row, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Moll et al. with a supporting plate with 96 bores and eight vessels disposed adjacently in a row to conform

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with industry standards for accessibility to automation and ancillary equipment designed to the standard.

22. Alternatively, claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/45844 to Moll et al. in view of U.S. Patent No. 5,285,253 to Kloth.

Moll et al. show the plug-in connection comprising of a male portion (204) with a circular head (203) that is inserted into a female portion (128) with a circular hole (figs. 6a-d). Moll et al. do not explicitly disclose the plug-in connection is in the shape of a barb. Kloth shows similar plug-in connections with locking part (3) in the form of hook sections (16) with a cylindrical positioning section (20a) and two locking shoulders (18) that fit into a round locking section (24) as shown in fig. 16 and locking part (3) with hook sections (16) in arrow-like double hooks configuration with two locking shoulders (18) adjoined by positioning surfaces (20,22) that fit into a round locking section (24) as shown in fig. 3. The configuration of the locking mechanism is cited as advantageous for automatic positional fixation results (col. 3, lines 37-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the plug-in connection of the Moll et al. to a barb-like shape as in arrow-like double hooks configuration for automatic positional fixation results as taught by Kloth.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Quan  
Examiner  
Art Unit 1743

eq

  
Jill Warden  
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